

# EPA Proposals to Regulate Coal Combustion Residuals

Program Ops Meeting

5/26/2010

# Agenda

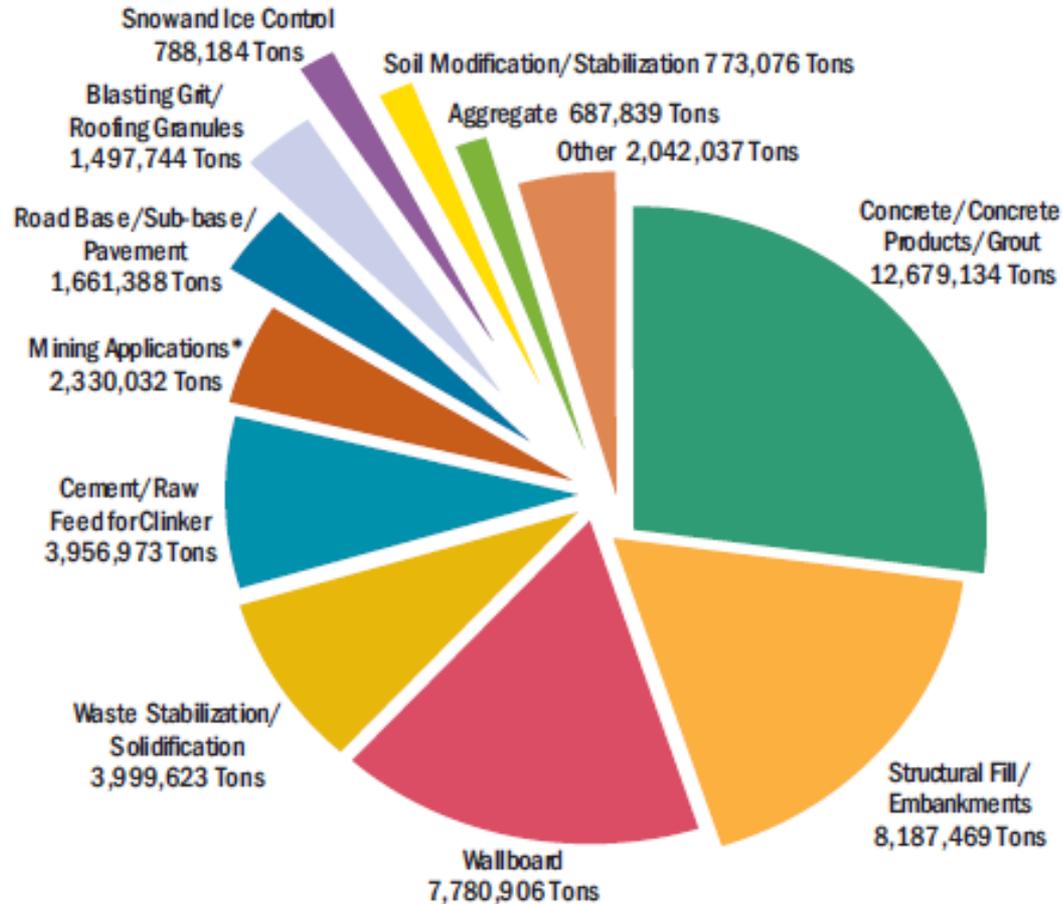
- Coal Combustion Residuals
- Background
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- FHWA Position
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# Coal Combustion Residuals

- Residues from coal fired power plants.
- **Bottom ash** – larger ash particles that fall to the bottom of the furnace.
- **Fly ash** – ash carried upward by hot gases in the furnace.
- **Boiler slag** – formed when combustion occurs in a wet boiler.
- **Flue gas desulfurization** – from scrubbers used to remove sulfur from air emissions.

# Coal Combustion Residual Uses

Figure 2: Top Uses of Coal Combustion Products, 2003



\* EPA and the National Academy of Sciences are evaluating the use of coal combustion products as minefill and will address this issue separately.

Source: American Coal Ash Association. 2004.

# How are these materials currently regulated/managed under RCRA?

## **RCRA – Resource Conservation and Recovery Act**

### Subtitle C - “Hazardous Waste”

- Cradle-to-Grave federal regulation

### Subtitle D - “Solid Waste”

- Framework to manage non-hazardous waste materials

# May 2000 Regulatory Determination

- EPA concluded these wastes do not warrant regulation under Subtitle C of RCRA.
- EPA determined national regulations under Subtitle D of RCRA are warranted for coal combustion wastes when they are disposed in landfills or surface impoundments, although this has not been issued yet.
- EPA concluded that no additional regulations are warranted for coal combustion wastes that are used beneficially.

# Beneficial Use

## **2000 Regulatory Determination**

“We do not wish to place any unnecessary barriers on the beneficial use of fossil fuel combustion wastes so that they can be used in applications that conserve natural resources and reduce disposal costs. “

“We support increases in these beneficial uses, such as for additions to cement and concrete products, waste stabilization and use in construction products such as wallboard. “

## **2010 Proposal**

“EPA shares the concern that beneficial uses not be inadvertently adversely affected by the regulation of CCRs destined for disposal. EPA continues to believe that certain beneficial use, when performed properly, is the environmentally preferable destination for these materials and, therefore, wants to address any potential stigma that might arise from designating CCRs as hazardous wastes.”

“... from information available to date, EPA believes that encapsulated uses of CCR, as is common in many consumer products, does not merit regulation.”

# Background

- Two large failures contributed to EPA revisiting the Bevill Regulatory Determination for Coal Combustion Residuals (CCRs).
  1. 0.5 million cubic yard release of water and fly ash to the Delaware River at the Martin's Creek Power Plant in Pennsylvania in 2005.
  2. catastrophic failure of a dike at TVA's Kingston, Tennessee facility, leading to the release of 5.4 million cubic yards of fly ash sludge over an approximately 300 acre area and into a branch of the Emory River in December 2008.

# How FHWA has Been Involved

- HIPT has been working with HEP and OST to review various drafts and provide comments on EPA's proposed rule since December 2009.
- HIPT, HEP, and OST have participated in conference calls and met with EPA in February 2009 to discuss impacts of the proposed rule on state DOT's.

# EPA Position

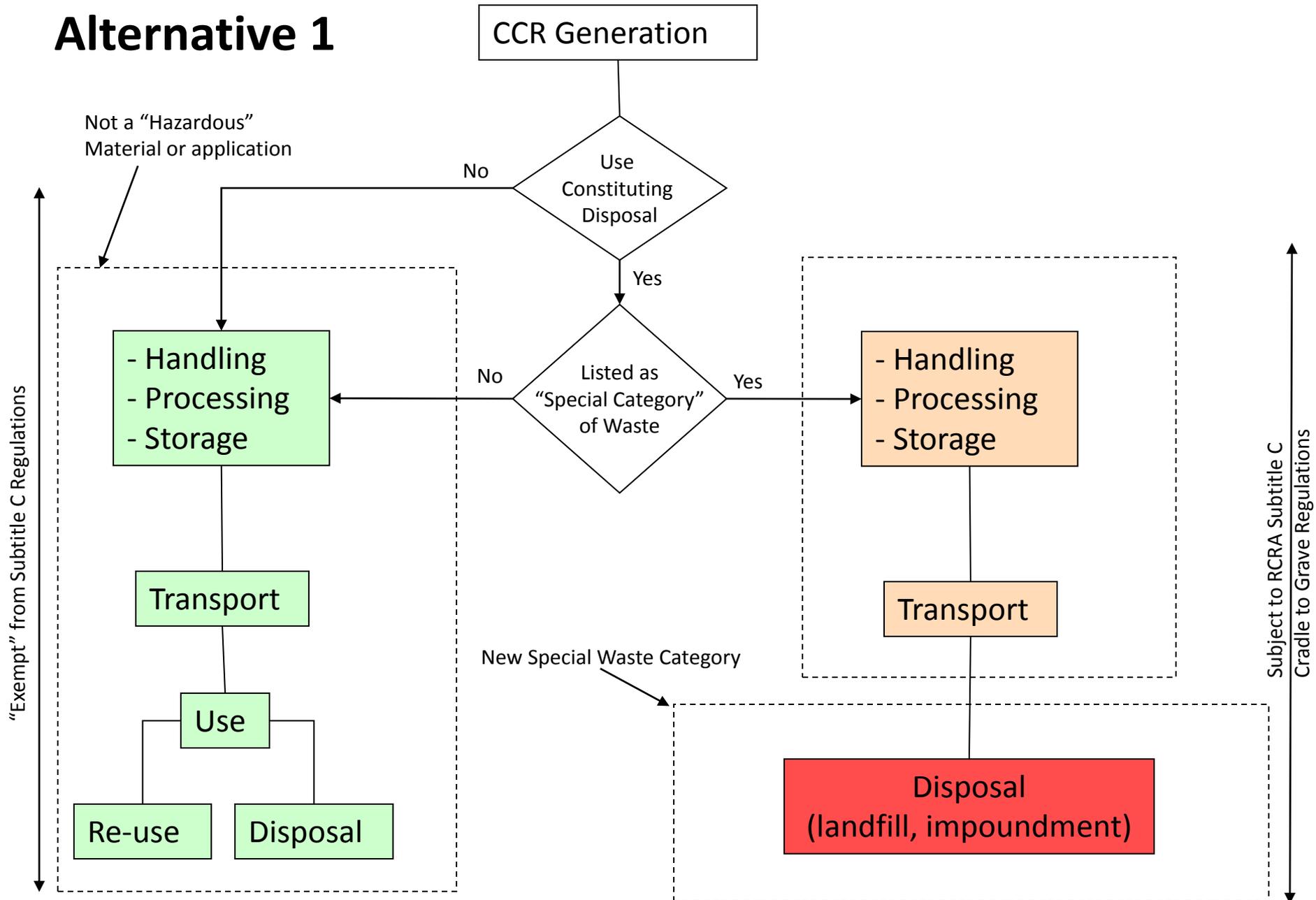
“Review of the information developed over the past ten years has confirmed EPA’s original risk concerns, and has raised significant questions regarding the accuracy of the Agency’s predictions **regarding anticipated improvements in management and state regulatory oversight of these wastes**. Consequently, the Agency has determined that reconsideration of its May 2000 Regulatory Determination is appropriate, and is reevaluating whether regulation of CCRs under RCRA subtitle C is necessary in light of the most recent information. The scientific analyses, however, are complex and present legitimate questions for comment and further consideration. Thus, while **EPA has concluded that federal regulation of this material is necessary**, the Agency has yet not reached a conclusion as to whether the Bevill determination should be revised, or whether regulation under RCRA subtitle C or D is appropriate, but is soliciting comments on the two options described in the previous section.”

# Co-Proposal: Alternative 1

Adopted by each state; Effective date is 1-2 years

- Reversal of Bevill Regulatory Exemption for disposal.
- Beneficial uses of CCRs will retain the Bevill Exemption.
  - Bevill Exemption provides that CCRs are managed as solid waste as opposed to hazardous waste.
- CCRs listed as *Special Wastes* will be subject to RCRA Subtitle C requirements when disposed.
  - Subtitle C is the cradle-to-grave management of hazardous waste (40 CFR 124, 260-268, 270-279).

# Alternative 1



# Co-Proposal: Alternative 2

Effective 6 months after final rule is promulgated

- Bevill Regulatory Exemption remains in place.
- Disposing of CCRs regulated under RCRA subtitle D and issuing national minimum criteria.
  - Permitting and monitoring of waste is the state's responsibility.

# Alternative 2

CCR Generation

Destined for Beneficial Use

Destined for Disposal

Not a "Hazardous"  
Material or application

Not a "Hazardous"  
Material or application

"Exempt" from Subtitle C Regulations

"Exempt" from Subtitle C Regulations

- Handling  
- Processing  
- Storage

Transport

Use

Re-use

Disposal

- Handling  
- Processing  
- Storage

Transport

**Subject to Subtitle D**

Increased requirements for  
safe disposal – double liners,  
water monitoring, etc.

Disposal  
(landfill, impoundment)

# Additional Information

- EPA is concerned with unencapsulated CCRs such as use in roadway embankments.
- Additional guidance and clarification on the definition of beneficial uses will be provided.
- Demolition from debris beneficially used in concrete would not be listed as a Special Waste subject to RCRA Subtitle C.
- Alternative 2 is less costly than Alternative 1 although EPA sees advantages to Alternative 1 (such as federal oversight and less failures)

# Average Annualized Costs and Benefits

	<b>Alternative 1 Subtitle C “Special Waste”</b>	<b>Alternative 2 Subtitle D</b>
Regulatory Costs	\$1,474	\$587
Regulatory Benefits	\$6,320 to \$7,405	\$2,533 to \$3,026
Net Benefits	(\$18,199) to \$5,930	(\$502) to \$2,439
Benefit/Cost Ratio	(11.347) to 5.022	0.145 to 5.159

# EPA Seeking Comments

- Beneficial uses – definitions, state programs
- Stigma – procedural difficulties for states
- State programs- impact of proposals on states

# FHWA Position

- Agree with Bevill Exemption for Beneficial Use.
- Prefer Alternative 2.
- Fully support the use of fly ash as an engineering material beneficial to the construction of highways.
- Concerned that Stigma associated with “Special Waste” listing will impact use.
- Need to confirm that wasting of materials resulting from beneficial use of CCRs are not subject to Subtitle C.
- Need to clarify all potential beneficial uses for highway applications.
- Desire that Special Waste category clearly state that fly ash inherently is not a material that poses a risk to human health or the environment.

# Please note...

- This is not a “ban” on fly ash.
- EPA sees no risk to human health and the environment when fly ash is beneficially used.
- EPA has considerably modified their original proposal due to concerns related to the stigma of a “hazardous” material.
- Industry has met with EPA, OMB and FHWA to express their support of fly ash as a valuable material to our nation’s highway system.
- AASHTO has expressed their support of fly ash to both EPA and FHWA.

# FHWA Management of Comments

- Additional Comments from FHWA will be submitted to EPA directly in an informal manner.

# Resources

- Proposed Rule:

<http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/ccr-rule/index.htm>

- Frequently Asked Questions:

<http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/ccr-rule/ccrfaq.htm>

- Key Differences:

<http://www.epa.gov/epawaste/nonhaz/industrial/special/fossil/ccr-rule/ccr-table.htm>

- Docket:

– [www.Regulations.gov](http://www.Regulations.gov) - EPA-HQ-RCRA-2009-0640

# Resources

- EPA website on coal combustion residuals:
  - <http://www.epa.gov/wastes/nonhaz/industrial/special/fossil/coalashletter.htm>
- FHWA "Fly Ash Facts for Highway Engineers":
  - <http://www.fhwa.dot.gov/pavement/recycling/fatoc.cfm>
- Using Coal Ash in Highway Construction:
  - <http://epa.gov/wastes/partnerships/c2p2/pubs/greenbk508.pdf>

**QUESTIONS?**